

## Existence Of Certain Anomalies In Indian Stock Market

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**Abstract** --Since the pioneering works of Fama (1965) and Cross (1973) there have been many anomalies documented concerning the behaviour of security price returns. The most prevalent of these anomalies appear to be weekend effect, where stocks exhibit significantly lower returns over the period between Friday's close and Monday's close (French 1980, Lakonishok and Levi 1982, Keim and Stambaugh 1984); a January effect, where returns are unusually high during the month of January as compared to any other month (Rozeff and Kinney 1976, Reinganum 1983); and a Holiday effect, where returns are much higher on trading days immediately prior to holidays (Ariel 1990, Kim and Park 1994). The other irregularities include monthly effect (Ariel 1987), turn-of-the-month effect (Lakonishok and Smidt 1988) and relatively less documented Friday-the-thirteenth effect (Kolb and Rodriguez 1987). The anomalies mentioned above have originally been documented for the US market and its empirical confirmation and extension has now taken place to other capital markets mostly in developed world. In spite of these phenomena appearing in different markets around the world, there still remain people who believe that some of the irregularities are artifacts caused by institutional factors such as ex-dividend, tax and liquidity effects (Bowers and Dimson 1988). Hence, one's belief regarding the true market anomalies would be strengthened if it is known to occur also in other capital markets of developing economies which are characterized by separate cultures and institutional arrangements. Thus, it is of interest to search whether such anomalies exist for a developing market such as one in India. In fact very little empirical research on calendar anomalies has been undertaken on security market using Indian data. Chaudhury (1991) studied BSE Sensex between June 1988 and January 1990 and found that average return on Monday is negative and highest returns are on Friday. Poshakwale (1996) studied BSE National Index and found that mean return except for Monday and Wednesday are positive. Arumugam (1998) investigated the "day-of-the week effect" on stock return for a longer time series (April 1979 to March 1997) and used the dummy variable regression model used in international studies. He divided the data set for different sub-periods and also for bull and bear phases of the market. Friday returns are found to be significantly positive in all periods except the sub-periods 1979-85, bull and bear phases. While Monday returns are significantly negative in the bear phase, they are significantly positive in the bull phase, and become insignificant in other periods. Though the results are the first comprehensive analysis of the 'day-of-the week' effect in Indian markets, the study deals with only one aspect of market anomalies. The

present study, which deals with different aspects of market anomalies using BSE Sensex and S&P CNX Nifty market returns.

**Keywords:** Anomaly, Indian Stock Market, Sensex, Nifty

### I. INTRODUCTION

#### A. DAY-OF-THE WEEK EFFECT

One of the puzzling empirical findings reported in finance is that the sample distributions of daily common stock returns vary by day-of-the week. To investigate the day-of-the week effect, the average return for various days-of-the week for different periods were taken for the study. Table 1 contains the summary statistics for mean daily return for the whole period as well as for three sub-periods of three years each.

TABLE 1. MEANS, STANDARD DEVIATIONS, T-STATISTIC AND F-STATISTIC OF THE RETURNS ON THE BSE SENSEX BY DAY-OF-THE WEEK

Weekday →	Mon	Tue	Wed	Thu	Fri
<b>1992-2004</b>					
Mean	-0.043	-0.034	0.048	0.009	0.145
SD	2.031	1.500	1.569	1.560	1.640
t-statistic	0.501	-0.538	2.173	0.129	0.686
No.	551	552	555	556	552
F-statistic	0.0297	(4,2764)			
<b>1992-1994</b>					
Mean	-0.110	-0.183	0.070	0.126	0.237
SD	1.858	1.441	1.309	1.495	1.576
t-statistic	-0.681	-1.473	0.627	0.972	1.775
No.	132	134	136	134	139
F-statistic	1.6910	(4,673)			
<b>1995-1997</b>					
Mean	-0.177	-0.090	0.220	-0.102	0.220
SD	2.236	1.249	1.874	1.615	1.417
t-statistic	0.954	-0.873	1.416	-0.759	1.860
No.	145	147	145	144	143
F-statistic	0.8513	(4,722)			

<b>1998-2000</b>					
Mean	-0.148	0.118	0.169	0.022	0.423
SD	2.236	1.824	1.780	1.773	1.949
t-statistic	0.954	0.783	1.162	0.151	<u>2.613</u>
No.	149	146	149	153	145
F-statistic	2.5883	(4,740)			
<b>2001-2004</b>					
Mean	-0.075	0.013	0.108	-0.006	0.268
SD	1.675	1.411	1.121	1.268	1.446
t-statistic	-0.499	0.100	1.079	-0.049	<u>2.070</u>
No.	125	125	125	125	125
F-statistic	0.088	(4,623)			

Note : Single underlined are Significantly different from zero at 5% level

Double underlined are Significantly different from zero at 1% level

TABLE 2. MEANS, STANDARD DEVIATIONS, T-STATISTIC AND F-STATISTIC OF THE RETURNS ON THE S&P CNX NIFTY BY DAY-OF-THE WEEK SELECTING A TEMPLATE (HEADING 2)

Weekday →	Mon	Tue	Wed	Thu	Fri
<b>1994-2005</b>					
Mean	-0.089	-0.133	0.035	0.003	0.341
SD	1.976	1.396	1.500	1.447	1.597
t-statistic	-1.094	<u>-2.316</u>	<u>5.504</u>	0.059	0.523
No.	588	591	586	596	575
F-statistic	1.7589	(4,293 4)			
<b>1994-1996</b>					
Mean	-0.164	-0.293	0.132	0.037	0.160
SD	1.513	1.110	1.424	1.404	1.428
t-statistic	-1.294	<u>-3.170</u>	1.100	0.320	1.337
No.	142	144	141	145	143
F-statistic	0.4770	(4,713)			
<b>1997-1999</b>					
Mean	-0.179	-0.236	0.869	0.090	0.024
SD	2.732	1.494	1.678	1.597	1.716
t-statistic	-0.799	-1.924	<u>6.299</u>	0.695	0.167
No.	149	148	148	151	142
F-statistic	0.2116	(4,736)			
<b>2000-2002</b>					
Mean	-0.140	-0.126	0.241	0.005	0.186
SD	1.690	1.594	1.594	1.417	1.726
t-statistic	-1.018	-0.963	1.844	0.047	1.301
No.	151	149	149	154	146

F-statistic	0.3276	(4,747)			
<b>2003-2005</b>					
Mean	-0.128	0.116	0.114	0.065	0.193
SD	1.718	1.308	1.128	1.364	1.481
t-statistic	0.901	1.083	1.229	0.576	1.560
No.	146	150	148	146	144
F-statistic	0.0903	(4,732)			

Note : single underlined are significantly different from zero at 5% level

Double underlined are Significantly different from zero at 1% level \*\*

The result for the whole period indicates that mean returns are negative for Monday, Tuesday and positive for Wednesday, Thursday and highest returns for Friday in table 1 and 2.

The statistics for the three sub-periods revealed that Monday returns are negative for the sub periods 1992-1994, 1995-1997, 1998-2000 and 2001-2004 for BSE Sensex in table 1 and 1994-1996, 1997-99, 2000-2002 and 2003-2005 for S&P CNX Nifty in table 2. Interestingly daily returns for both Thursday and especially Friday are positive for the whole period as well as for all sub periods. The t - Statistics shown in the table 1 and table 2 indicates the daily returns at the beginning of the week are negative and positive for Thursday and Friday, for the whole period and for the sub periods except for 2001-2004 for Sensex and for 2003 – 2005 for Nifty at 5% level of significance. The F-test has rejected the equality of mean return in all periods and the rejection is mostly explained by the highest positive return on Friday.

The results of sub periods for both BSE Sensex and S&P CNX Nifty indicate that the distributions of daily returns vary by day-of-the week while return on Friday is significantly positive, the average returns on Monday Tuesday and Wednesday are negative. Thus the study with regard to day –of –the week anomaly concludes that it appears to be a Friday effect in the BSE Sensex and S&P CNX Nifty of the Indian Stock Market.

#### B. DAY-OF-THE MONTH EFFECT

Table 3 Sensex, Table 4 Nifty presents the values of daily returns for 31 calendar days. The data used for the study conventionally excluded the holiday return and contain 2766 observations for Sensex 2937 observations for Nifty.

The highest mean return for Sensex falls on 7th day of the month, and the lowest is 23rd day of the month. In case of Nifty, the highest mean calendar day return is on 1st day of the month, and the lowest is on 13th day of the month.

Table 3 and 4 display the arithmetic mean returns for 31 calendar days for both Sensex and Nifty respectively. Most of the average returns for calendar days for the first 15 days of the month were positive and negative return almost for the second 15 days of the month.

TABLE 3. MEANS, STANDARD DEVIATIONS, T-STATISTIC OF THE RETURNS BY

Day-of-the month – Sensex

Statistics	1	2	3	4	5	6
Mean	0.215	0.391	0.115	0.298	0.088	0.319
SD	2.112	1.790	1.987	1.682	1.563	1.302
No. of Obs	82	84	98	97	95	93
t-stat	0.921	2.001*	0.572	1.748*	0.548	2.366*
	7	8	9	10	11	12
Mean	0.436	0.253	0.051	-0.005	-0.149	-0.173
SD	1.753	1.585	1.655	1.606	1.569	1.626
No. of Obs	94	95	93	95	90	95
t-stat	2.411*	1.556	0.297	-0.031	-0.900	-1.039
	13	14	15	16	17	18
Mean	-0.184	0.106	-0.174	0.114	0.010	0.070
SD	1.634	1.630	1.747	1.594	2.128	1.617
No. of Obs	89	85	87	94	95	90
t-stat	-1.063	0.597	-0.927	0.695	0.045	0.412
	19	20	21	22	23	24
Mean	-0.282	-0.232	-0.073	-0.232	-0.289	-0.067
SD	1.665	1.238	1.657	1.475	1.578	1.795
No. of Obs	95	90	90	94	90	95
t-stat	-	-	-	-	-	-
	25	26	27	28	29	30
Mean	0.065	-0.058	0.014	-0.109	0.096	-0.037
SD	1.351	1.805	1.549	1.714	1.607	1.507
No. of Obs	83	81	91	90	84	80
t-stat	0.439	-0.289	0.089	-0.603	0.547	-0.219
	31					
Mean	0.213					
SD	1.980					
No. of Obs	52					
t-stat	0.777					

\* 5% level of significance

TABLE 4. MEANS, STANDARD DEVIATIONS, T-STATISTIC OF THE RETURNS BY DAY-OF-THE MONTH – S&P CNX NIFTY

Statistics	1	2	3	4	5	6
Mean	0.4221	0.4149	0.2885	0.3053	0.0860	0.3008
SD	1.6393	1.9406	2.3035	1.6040	1.5215	1.1655
No. of Obs	91	88	99	100	101	100
t-statistic	2.4564*	2.0059*	1.2460	1.9035*	0.5679	2.5805*
	7	8	9	10	11	12
Mean	0.3692	0.2069	0.1259	-0.1488	-0.2234	-0.1651
SD	1.5408	1.4732	1.3198	1.6122	1.4094	1.4949
No. of Obs	99	98	98	100	100	99
t-statistic	2.3841*	1.3904	0.9445	-0.9231	-1.5852	-1.0988
	13	14	15	16	17	18
Mean	-0.2978	-0.0528	0.1091	0.1580	0.0707	-0.0478
SD	1.4800	1.6988	1.6166	1.5664	2.0242	1.6337

No. of Obs	95	92	89	98	99	98
t-statistic	-1.9609*	-0.2981	0.6369	0.9985	0.3475	-0.2899
	19	20	21	22	23	24
Mean	-0.2248	-0.2484	0.0594	-0.2979	-0.2956	0.1441
SD	1.5590	1.2072	1.5489	1.4831	1.4524	1.5932
No. of Obs	101	97	95	97	96	99
t-statistic	-1.4494	2.0263*	0.3738	1.9780*	1.9942*	0.8999
	25	26	27	28	29	30
Mean	0.1383	0.1039	0.0845	-0.1399	0.1979	0.0277
SD	1.2891	1.6353	1.4728	1.7613	1.6005	1.2753
No. of Obs	90	86	98	98	91	86
t-statistic	1.0175	0.5890	0.5680	-0.7866	1.1794	0.2013
	31					
Mean	0.0586					
SD	2.2800					
No. of Obs	58					
t-statistic	0.1956					

\* 5% level of significance.

C. MONTH-OF-THE YEAR EFFECT (JANUARY EFFECT)

The January effect is another pervasive and well-documented anomaly in the financial market. Numerous researchers have found that the average return on January has been unusually high and this phenomenon is referred to as “January effect”.

Using the sample data, monthly return the null hypothesis is :

$$H_0 : R_{Jan} = R_{Feb} = \dots = R_{Dec}$$

i.e., the mean return across the twelve months is equal, against the alternative.

$$H_1 : R_{Jan} < R_{Feb} < \dots < R_{Dec}$$

i.e., the mean returns across the twelve months are different from each other.

TABLE 5. MEANS, STANDARD DEVIATIONS AND T-STATISTIC OF THE RETURNS ON S&P CNX NIFTY BY MONTH-OF-THE YEAR

Month	Stats	1994-05	1994-97	1998-01	2002-05
January	Mean	0.2328	0.1699	0.1687	0.3769
	SD	1.2468	1.3611	1.3755	0.9194
	t-stat	2.8440*	1.1022	1.1171	3.4545
February	Mean	0.1809	0.2637	0.1537	0.1248
	SD	1.6418	2.0528	1.5356	1.2501
	t-stat	1.6959	1.1420	0.8953	0.8814
March	Mean	-0.1522	-0.2097	-0.0655	-0.1745
	SD	2.1347	2.6328	2.2359	1.2037
	t-stat	-1.1522	-0.7764	-0.2686	-1.3128
April	Mean	-0.1203	0.0930	-0.2147	-0.1740
	SD	1.8915	1.3744	2.6273	1.2754
	t-stat	-0.9242	0.4974	-0.7125	-1.2280
May	Mean	0.0658	0.1744	0.0930	-0.0697
	SD	1.9857	1.6538	1.9375	2.3239
	t-stat	0.5282	0.9724	0.4401	-0.2765
June	Mean	0.1225	0.2018	-0.0718	0.2431
	SD	1.4213	1.0368	1.9337	1.0871
	t-stat	1.3791	1.7838	-0.3465	2.0614
July	Mean	0.0121	0.0091	-0.0499	0.0769
	SD	1.3283	1.2450	1.5941	1.1077
	t-stat	0.1468	0.0672	-0.2936	0.6513
August	Mean	0.0675	-0.0855	0.0161	0.2558
	SD	1.1779	1.1720	1.2351	1.1112
	t-stat	0.8994	-0.6360	0.1200	2.1227
September	Mean	-0.0457	-0.1083	-0.2099	0.1764
	SD	1.4031	0.9071	1.8869	1.2301
	t-stat	-0.5175	-1.0943	-1.0136	1.3223
October	Mean	-0.1145	-0.1504	-0.2114	0.0145
	SD	1.6335	1.7320	1.8631	1.2676
	t-stat	-1.0837	-0.7568	-1.0213	0.1032
November	Mean	0.0993	-0.3931	0.2417	0.4418
	SD	1.3173	1.3835	1.4152	0.9668
	t-stat	1.1551	-2.4929*	1.5369	4.0094
December	Mean	0.0278	0.0614	0.1226	-0.0954
	SD	1.7092	1.7936	1.8662	1.4634
	t-stat	0.2581	0.3135	0.5951	-0.6048

\* 5% level of significance

TABLE 6. MEANS, STANDARD DEVIATIONS AND T-STATISTIC OF THE RETURNS ON BSE SENSEX BY MONTH-OF-THE YEAR

Month	Stats	1992-04	1992-95	1996-99	2000-04
January	Mean	0.220	0.116	0.182	0.445
	SD	1.359	1.662	1.439	0.892
	t-stat	2.333*	0.616	1.144	3.268
February	Mean	0.184	0.267	0.207	0.077
	SD	1.710	2.022	1.674	1.394
	t-stat	1.647	1.166	1.100	0.486
March	Mean	-0.238	-0.495	0.123	-0.344
	SD	2.102	1.902	2.495	1.821
	t-stat	-1.754	-2.315*	0.442	-1.699
April	Mean	-0.045	0.011	-0.036	-0.101
	SD	1.953	1.637	2.561	1.541
	t-stat	-0.341	0.055	-0.120	-0.585
May	Mean	-0.008	0.119	0.025	-0.157
	SD	1.977	1.493	2.193	2.161
	t-stat	-0.062	0.711	0.102	-0.672
June	Mean	0.120	0.086	0.129	0.144
	SD	1.544	1.352	1.952	1.232
	t-stat	1.239	0.585	0.614	1.074
July	Mean	-0.019	0.045	-0.070	-0.070
	SD	1.466	1.319	1.787	1.085
	t-stat	-0.200	0.353	-0.365	-0.440
August	Mean	0.126	0.102	0.005	0.439
	SD	1.359	1.485	1.257	1.257
	t-stat	1.360	0.645	0.039	2.207*
September	Mean	-0.129	-0.071	-0.248	-0.032
	SD	1.546	1.161	1.996	1.355
	t-stat	-1.254	-0.622	-1.130	-0.155
October	Mean	-0.095	-0.145	-0.258	0.193
	SD	1.539	1.557	1.970	1.222
	t-stat	-0.909	-0.900	-1.163	1.034
November	Mean	0.090	0.141	0.254	0.311
	SD	1.460	1.476	1.477	1.082
	t-stat	0.898	0.867	1.556	1.773
December	Mean	0.086	0.116	0.107	0.042
	SD	1.719	1.662	2.129	1.323
	t-stat	0.790	0.616	0.451	0.298

\* 5% level of significance

The mean and standard deviation have been calculated for the whole period (1994-2005), as well as for the different sub-periods 1994-97, 1998-01, and 2002-05 for S&P CNX Nifty table 5 and for the whole period 1992-94 as well as for the different sub-periods 1993-96, 1997-2000 and 2000-04 for BSE Sensex table 6.

Investigation reveals that the mean returns for the months of March, April, September and October are negative for the whole period and as well as for the sub periods for both the BSE Sensex, S&P CNX Nifty market returns.

Investigation of t statistic measured for the whole period reveals that only returns for January, June, August and November are significantly positive for both BSE Sensex and S&P CNX Nifty. The results thus did not show any evidence of monthly effect where returns for a particular months was persistently higher than that of other months of the year.

#### D. MONTHLY EFFECT

To investigate the monthly effect the null hypothesis set was:

“Mean daily returns in the first half of the month is equal to the mean daily return in the second half of the month”.

In testing the monthly effect, the first half of each month is defined as the period which includes 30th and 31st calendar days of the previous month and 1 to 14 calendar days of the month, while the second half comprises the rest of the calendar days (15,.....,29). The returns across the first half as well as the second half of all months for BSE Sensex and S&P CNX Nifty along with the t- statistic were shown in table 7 and table 8.

TABLE 7. DIFFERENCE OF MEANS TEST COMPARING RETURNS AT THE FIRST HALF OF MONTH WITH RETURNS AT THE SECOND HALF OF THE MONTH – S&P CNX NIFTY

Statistics	Average Return Across Calendar Days (30,31,1,....,14) <sup>a</sup>	Average Return Across Calendar Days (15 to 29)
Mean	0.1071	-0.0489
SD	1.6259	1.5760
No. of Obs	1504	1432
t-statistic <sup>b</sup>	2.622	
Note : a. Last two calendar days of the previous month are included in the first half of the month.		
b. 5% level of significance		

TABLE 8. DIFFERENCE OF MEANS TEST COMPARING RETURNS AT THE FIRST HALF OF MONTH WITH RETURNS AT THE SECOND HALF OF THE MONTH – SENSEX

Statistics	Average Return Across Calendar Days (30,31,1,....,14) <sup>a</sup>	Average Return Across Calendar Days (15 to 29)
Mean	0.119	-0.078
SD	1.689	1.646
No. of Obs	1417	1349
t-statistic <sup>b</sup>	2.655	
Note : a. Last two calendar days of the previous month are included in the first half of the month.		
b. 5% level of significance		

The return values across the first half as well as the second half of all months along with the t statistic is shown in table 8 for Sensex indicates that the first half of the month is significant higher than that for calendar days during second half of the month. Thus, there is a very strong monthly return of BSE Sensex. With regard to monthly

effect in S&P CNX Nifty is similar as in the case BSE Sensex.

#### E. FRIDAY-THE-THIRTEENTH EFFECT

Superstition is deep-rooted in Indian society, where irrational fear still influences the mass mind. In this context, it is pertinent to investigate whether the Indian securities market is also affected by superstitions or has it been able to immunize itself against its force. From the empirical perspective, ‘Friday-the-thirteenth’ seems to be a natural choice to study this issue.

The null hypothesis is:

H0: (mean return on Friday the 13th) =  $\mu$  (mean return on other Fridays), against the alternative hypothesis

H1: (mean return on Friday the 13th) <  $\mu$  (mean return on other Fridays).

TABLE 9. FRIDAY RETURNS OF SENSEX 1992-2004

	1994-2005
Friday the 13 <sup>th</sup>	
Mean	0.0779
SD	1.140
Observations	17
Other Fridays	
Mean	0.0335
SD	1.609
Observations	558
t-statistic	0.523

TABLE 10. FRIDAY RETURNS OF NIFTY 1994-2005

	1992-2004
Friday the 13 <sup>th</sup>	
Mean	0.126
SD	1.332
Observations	16
Other Fridays	
Mean	-0.053
SD	1.649
Observations	536
t-statistic	-0.686

The data consists of 652 Friday returns between June 1992 to June 2004, which includes 16 daily returns on Friday the thirteenth for BSE Sensex and 675 Friday returns between January 1994 to December 2005 which includes 17 daily returns on Friday-the-thirteenth for S&P CNX Nifty.

Table 9 and table 10 present the means and Standard Deviation for Friday the-thirteenth and all other Fridays along with the t statistic to test the equality of the mean of Friday the thirteenth and other Fridays mean returns for the whole period for both BSE Sensex and S&P CNX Nifty Market Returns.

For the whole period mean returns for the BSE Sensex (1992-2004) and for S&P CNX Nifty (1994-2005), mean returns on Friday-the-thirteenth are actually higher than that of on the remaining Fridays although the difference was not statistically significant. The result indicates that there is certainly no evidence of mean returns being lower on Friday-the-thirteenth than on other Fridays for the whole period. Thus, it may be concluded that there is no “Friday-the-thirteenth effect” in Indian capital Market.

#### *F. BUDGET EFFECT*

The budget presented by the finance minister of India, usually at the end of february every year is a major event in India. Since the budget will contain policy statement by the government, it will have both favourable and unfavourable impact on companies, individuals, business and economy. Hence, the share prices will reflect the reactions of investors’ sentiments for the policies of the government as contained in the budget. Speculation with regard to the budget will influence business activity. In the past, budget always contained some duties on many products which resulted in an increase in price after the budget. “Budget will invariably push up the prices of many commodities” was the generally held view in India. For the purpose of analysis, average returns during five days earlier to the budget day and after the budget day were calculated for each year and results are presented for the two indices below.

TABLE 11. BUDGET EFFECT – NIFTY (SINGLE DAY SUB-PERIODS)

Budget	-5	-4	-3	-2	-1	0	1	2	3	4	5	Total of Squares
Manmohan Singh Budget (28.02.1994)	1.48	1.21	0.84	2.00	5.41	1.68	-3.40	-2.98	-2.58	-3.01	-2.75	84.19
Manmohan Singh's 5 <sup>th</sup> Budget (15.03.1995)	-0.18	-0.64	0.27	-0.37	-0.81	0.79	-3.99	-3.05	-2.03	-1.35	-0.99	34.09
Manmohan Singh's 6 <sup>th</sup> Budget (28.02.1996)	0.23	0.14	0.06	-1.13	-0.17	-0.01	-3.45	-1.38	-0.94	-0.60	-0.57	16.79
P. Chidambaram Budget I (22.07.1996)	0.39	0.48	-0.43	-0.19	-0.74	0.57	-3.02	-2.56	-1.92	-1.71	-1.70	26.68
P. Chidambaram Budget II (28.02.1997)	-0.21	-0.87	-1.25	-1.95	-1.16	0.59	10.36	5.61	4.20	3.03	1.54	176.00
Yeshwant Sinha's Budget I (01.06.1998)	-1.16	-1.16	-1.07	-0.99	-0.32	-0.89	-3.29	-0.95	-0.86	-1.47	-1.69	23.20
Yeshwant Sinha's Budget II (27.02.1999)	-0.73	-0.57	-0.64	-1.38	-2.33	-1.38	7.63	5.56	3.37	2.84	2.60	125.76
Yeshwant Sinha's Budget III (29.02.2000)	-0.36	-0.62	-0.41	-1.66	-0.83	-4.01	3.44	1.25	0.02	0.50	0.57	34.17
Sinha's Budget (28.02.2001)	-1.32	-1.33	-1.56	-1.05	-1.00	4.22	0.49	-1.70	-2.03	-1.15	-0.89	35.21
Jashwant Singh Budget (28.02.2002)	0.74	0.93	0.56	0.76	0.34	-4.05	3.10	1.52	1.05	0.66	0.87	33.01
Finance Minister Yashwant Singh Budget (28.02.2003)	-0.24	-0.38	-0.32	0.21	0.05	0.99	-0.43	-0.80	-0.72	-0.77	-0.89	4.04
Chidambaram Budget (08.07.2004)	0.80	0.86	0.47	1.05	2.08	-3.15	2.28	1.26	0.46	0.08	0.28	24.05
Chidambaram Budget (28.02.2005)	0.05	0.00	0.03	0.07	-0.60	2.03	-0.90	-0.24	0.40	0.53	0.53	6.10
<b>Total</b>	<b>-0.50</b>	<b>-1.95</b>	<b>-3.46</b>	<b>-4.63</b>	<b>-0.07</b>	<b>-2.61</b>	<b>8.81</b>	<b>1.55</b>	<b>-1.57</b>	<b>-2.43</b>	<b>-3.07</b>	
<b>Mean</b>	<b>-0.04</b>	<b>-0.15</b>	<b>-0.27</b>	<b>-0.36</b>	<b>-0.01</b>	<b>-0.20</b>	<b>0.68</b>	<b>0.12</b>	<b>-0.12</b>	<b>-0.19</b>	<b>-0.24</b>	
<b>Total Square</b>	<b>7.47</b>	<b>8.44</b>	<b>7.34</b>	<b>17.71</b>	<b>43.87</b>	<b>72.17</b>	<b>252.88</b>	<b>98.96</b>	<b>51.21</b>	<b>36.48</b>	<b>26.77</b>	

TABLE 12. BUDGET EFFECT – SENSEX (SINGLE DAY SUB-PERIODS)

Budget	-5	-4	-3	-2	-1	0	1	2	3	4	5	Total of Squares
Manmohan Singh Budget (28.02.1994)	1.08	1.30	0.95	2.12	5.33	3.66	-3.28	-2.63	-2.46	-3.00	-2.70	90.14
Manmohan Singh's 5 <sup>th</sup> Budget (15.03.1995)	-0.19	-0.64	0.16	-0.32	-0.50	0.63	-2.55	-1.74	-1.90	-1.53	-1.11	17.95
Manmohan Singh's 6 <sup>th</sup> Budget (28.02.1996)	0.22	-0.04	0.01	-0.65	-0.45	-0.72	-0.72	-1.84	-0.98	-0.85	-0.55	7.07
P. Chidambaram Budget I (22.07.1996)	0.60	0.84	0.64	-0.09	1.65	0.92	0.26	-1.81	-1.95	-1.62	-1.68	17.65
P. Chidambaram Budget II (28.02.1997)	-0.38	-0.94	-1.34	-1.98	-1.58	1.36	10.80	6.34	4.20	2.73	1.62	195.66
Yeshwant Sinha's Budget I (01.06.1998)	-1.11	-1.15	-1.04	-0.28	0.28	-1.19	-1.93	-0.62	-0.89	-1.59	-1.28	14.29
Yeshwant Sinha's Budget II (27.02.1999)	-0.74	-0.55	-0.68	-1.07	-1.53	-1.46	8.59	5.92	3.59	3.02	2.87	146.04
Yeshwant Sinha's Budget III (29.02.2000)	-0.47	-1.10	-0.38	-2.04	0.11	-5.25	3.52	0.74	-0.42	0.34	0.52	46.82
Sinha's Budget (28.02.2001)	-1.37	-1.46	-1.86	-1.12	-1.32	4.27	0.58	-1.82	-2.01	-1.21	-0.92	38.67
Jashwant Singh Budget (28.02.2002)	0.81	1.06	0.51	0.64	0.34	-3.95	3.22	1.11	0.73	0.36	0.71	30.89
Finance Minister Yashwant Singh Budget (28.02.2003)	-0.16	-0.33	-0.22	0.29	0.12	0.19	-0.19	-0.60	-0.59	-0.72	-0.81	2.23
<b>Total</b>	<b>-1.71</b>	<b>-3.02</b>	<b>-3.24</b>	<b>-4.51</b>	<b>2.46</b>	<b>-1.54</b>	<b>18.29</b>	<b>3.06</b>	<b>-2.68</b>	<b>-4.07</b>	<b>-3.33</b>	<b>90.14</b>
<b>Mean</b>	<b>-0.16</b>	<b>-0.27</b>	<b>-0.29</b>	<b>-0.41</b>	<b>0.22</b>	<b>-0.14</b>	<b>1.66</b>	<b>0.28</b>	<b>-0.24</b>	<b>-0.37</b>	<b>-0.30</b>	<b>17.95</b>
<b>Total Square</b>	<b>6.33</b>	<b>9.88</b>	<b>8.61</b>	<b>16.09</b>	<b>38.44</b>	<b>81.90</b>	<b>235.13</b>	<b>97.74</b>	<b>50.84</b>	<b>36.03</b>	<b>26.42</b>	

The research presented in table 13 and 14 reveals that the mean return does not register any significant difference during the period of 5 days before and after and even on the budget date in Sensex returns and also in nifty returns. This implies that the budget has no influence over the market returns of BSE Sensex and S&P CNX Nifty.